

REMARKS

Claims 1, 3-14, 16, 17, 22, 26, 29, 31, 35, 38-40, 44, 45, 47, 48, 50-54, 57-59, 61-65, 67, 68 and 70 are pending in the application and are subject to restriction and election pursuant to 35 U.S.C. §§121 and 372. Claims 1, 3, 14, 16, 22, 26, 29, 31, 35, 39, 44, 45, 47, 48, 50, 51, 57, 68 and 70 have been amended without prejudice or disclaimer and claims 71-91 have been added. Accordingly, 1, 3-14, 16, 17, 22, 26, 29, 31, 35, 38-40, 44, 45, 47, 48, 50-54, 57-59, 61-65, 67, 68 and 70-91 will be pending in the application upon entry of this paper.

Support for the claim amendments and additions can be found throughout the specification and claims as originally filed. In particular, support for the amendment of claim 1 can be found at least, for example, in claim 2 as originally filed and in the specification at page 5. Support for the addition of claims 71-91 can be found at least, for example, in claims 1-70 as originally filed in the specification at page 5 and pages 20-27. No new matter has been added.

Restriction Requirement

The Office Action indicates that the pending claims encompass a plurality of inventions or groups of inventions and requires Applicants to elect one of the 15 invention groups, i.e., Groups I-XV listed on pages 2-4 of the Office Action. The Office Action also indicates that the claims are generic to a plurality of microsatellite loci. Accordingly, Applicants are required to elect a single disclosed microsatellite locus species from the species listed on page 4 of the Office Action to which the claims shall be restricted in the event no generic claim is finally held allowable. The Office Action still further indicates that claim 38 recites multiple, patentably distinct sequences and requires Applicants to elect one of the ten sequences recited.

Applicants provisionally elect, subject to the traverse below, Group I, claims 1 and 3-13, the species D22S272, and SEQ ID NO: 3 (left flanking primer sequence for D22S272). Claims 1, 3-13 and new claims 71-75 read on the invention of Group I; claims 1, 3, 13, 71 and 75 read on the elected species D22S272 and claims 13 and 75 read on

SEQ ID NO: 3. Applicants note that the elected species D22S272 falls within the region between microsatellite loci D22S929 and D22S1169 recited in claim 71.

Applicants respectfully traverse the requirement for restriction and election and submit that the requirements are improper.

The Office Action alleges that the claimed subject matter of Groups I-XV do not relate to a single general inventive concept because the claims lack the same or corresponding technical features. Specifically, the Office Action asserts that each group of claims requires a technical feature that is not required by any of the other groups. The Office Action alleges that the first common technical feature is a method for screening DNA in a sample for susceptibility to an infection using microsatellite markers and that such a method is disclosed in the Norose, *et al.* paper.

Applicants respectfully disagree and assert that the various invention groups represent different embodiments of a single inventive concept for which a single patent should issue. The pending claims represent an intricate web of knowledge, continuity of effort, and consequences of a single invention, which merit examination of all of these claims in a single application.

More particularly, a single, searchable, unifying aspect links all of the claims. This single, searchable, unifying aspect is based on the discovery that DNA sequences on certain loci, all on chromosome 22, confer a resistance to infection, especially viral resistance as exemplified by HIV resistance. This common technical feature, namely the polymorphic genotype present at the various loci on chromosome 22 and the expression products thereof, is a feature of every claim. For example, the peptide of claim 26 is encoded by the region of the nucleic acid defined by the markers D22S929 and D22S1169. These markers are very specific and none is disclosed or suggested in the Norose, *et al.* paper.

In addition, Applicants respectfully invite the Examiner's attention to the fact that claim 38 is not among the claims of Group I, although claim 13 and new claim 75, which recite SEQ ID NOS: 1-10. Claims 13 and 75 are directed to a PCR step and the recited sequences are merely primer sequences used to cut. The sequences are not the actual targeted sequences of the region of chromosome 22 and Applicants are not claiming the

primer sequences per se. Moreover, one of ordinary skill in the art will readily appreciate that both left and right flanking primer sequences will be required to conduct PCR.

Accordingly, Applicants respectfully request withdrawal of the requirement for election among the recited primer sequences. It makes no sense to limit Applicants to election of a single primer sequence, *i.e.*, SEQ ID NO:3, the left flanking primer sequence for D22S272, when SEQ ID NO: 4 is the right flanking primer sequence for the same locus, and Applicants, at a minimum, respectfully request that the election be expanded to a pair of flanking sequences, in which case Applicants elect SEQ ID NOS: 3 and 4, the left and right flanking primers corresponding to the elected locus D22S272. In the event the restriction requirement is made final, Applicants respectfully request that all the primer sequences recited in claims 13 and 75 be searched and examined in the context of Group I, which, as noted above, excludes claim 38.

Furthermore, Applicants submit that a sufficient search and examination with respect to all species recited in the claims can be made without serious burden. As MPEP § 803 states:

If the search and examination of an entire application can be made without serious burden, the examiner must examine it on the merits, even though it includes claims to independent or distinct inventions.

That is, even if the various groups of claims are patentably distinct, the Examiner must still examine the entire application on the merits because doing so will not result in a serious burden.

Applicants submit that the search and examination of all the claims will have substantial overlap, and no serious burden will result from searching and examining all claims in the same application. This is especially true given the robust and extensive computerized search engines and databases at the Examiner's disposal. In particular, Applicants submit that a search of the claimed amino acid sequences of the various SEQ ID NOS will most likely involve BLAST and/or Genbank searching, which is computerized and easy to do.

Accordingly, in the interests of efficiency and cost savings to both Applicants and the Patent Office, Applicants respectfully request that the requirements for restriction and election be withdrawn and that all claims, loci and sequences be searched and examined.

In the alternative, Applicants request that at least all the loci species be examined so that in the event a generic claim is not found allowable, Applicants will have the opportunity to present claims to the specific patentable species in the same application.

If a telephone call with Applicants' representative would be helpful to resolve any issues regarding the requirement for species election and/or to otherwise expedite prosecution of the application, Applicants invite the Examiner to contact the undersigned at the telephone number shown below.

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Respectfully submitted,

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